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SONT DE PIÈTRE QUALITÉ DE REPRODUCTION

ÉTUDE D'UTILISATION FONCTIONNELLE DES TERRAINS
Parc Industriel de Shippagan

FUNCTIONAL LAND USE PLAN
Shippagan Industrial Park

Par/by: ROY CONSULTANT

GOVERNMENT OF NEW BRUNSWICK
GOUVERNEMENT DU NOUVEAU-BRUNSWICK

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GOVERNMENT OF CANADA
REGIONAL INDUSTRIAL EXPANSION

GOUVERNEMENT DU CANADA
EXPANSION INDUSTRIELLE REGIONALE

1987

ROY CONSULTANT
INGÉNIEURS-CONSEILS · CONSULTING ENGINEERS

506.546.4484

June 12, 1987

The Economic Expansion Commission
of the Peninsula Incorporated
P.O. Box 940
Tracadie, N.B.
E0C 2B0

To the attention of Mr. Roland Cormier, General Manager

File: 11-86
Re: Functional land use
plan - Shippagan Industrial Park

Dear Mr. Cormier,

We are pleased to present you with this final report on the functional land use plan for Shippagan Industrial Park.

The principal recommendations of this study are:

1- That the development of the Shippagan Industrial Park be as described in alternative No. 3 and shown on included plan No. 11-86-P-5

2- That the development of phase 1 of alternative No. 3 be done as soon as the required properties have been obtained and/or exchanged

3- That the properties shown on included plan No. 11-86-P-8 (new site) be reserved for long-term industrial use

We propose the following action plan for the development of alternative No. 3.

1. Rezoning of the required properties
2. Land exchange with Jiffy
3. Purchase of Property
4. Engineering of project
5. Construction

Once No. 2 of the action plan has been reached, it would then be possible to develop phase 1 at a cost of approximately $30,000.

.../2

Casier postal/P.O. Box 184, 755 Foley, Bathurst, N.-B., E2A 4A5

We were pleased to work with the steering-committee on this project and we would like to thank all the members of the steering-committee for their help.

Yours very truly,

Jean Jacques Roy, P. Eng.

JJR/fb

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11-86-P-3	Possible development - alternative No. 1	10-06-87
11-86-P-4	Possible development - alternative No. 2	10-06-87
11-86-P-5	Possible development - alternative No. 3	10-06-87
11-86-P-6	Alternative location plan	10-06-87
11-86-P-7	Alternative No. 4	10-06-87
11-86-P-8	Alternative No. 5	10-06-87

SECTION NO. 1 - INTRODUCTION

1.1 INTRODUCTION

The Shippagan Industrial Park was started when Jiffy Products Ltd. built there. At that time, there was an access street built and water and sewer services were brought in. There were no functionnal land use plan done at that time.

Through the years, it became evident that a functionnal land use plan was needed and, on December 18, 1986, the services of Roy Consultant were retained to prepare a funtionnal land use plan.

The study was done under the direction of a steering-committee composed of representatives of the following organization:

The Economic Expansion Commission of the Peninsula

The Planning Commission of the Peninsula

The Town of Shippagan

The Department of Commerce & Technology

The Department of Regional Industrial Expansion

The following sections describe the work done, the conclusion and recommendations of the consultant.

1.2 TERMS OF REFERENCE

The following paragraphs describe the consultant's mandate as planned and revised by the steering-committee.

1.2 TERMS OF REFERENCE (CONT'D)

(1) Initial meeting with the steering-committee

There are two aims to this meeting: first, to prepare the work plan with the members of the steering-committee: it will also be a working session where the existing information and guidelines will be discussed. This will include:

- the municipal plan
- the size of industrial land required
- the existing infrastructure

At this meeting, the input from the following agencies will be very important:

- The Economic Expansion Commission of the Peninsula;
- The Planning Commission of the Peninsula;
- The Town of Shippagan

(2) Existing location

The existing industrial site will be studied, as follows:

- a review of existing properties, including subdivision plan and possible extention;
- acquisition of adjacent lands;
- Preliminary subdivision plan, including infrastructures such as water, sewer, road, etc...;
- Preliminary cost estimate;
- Check for future expansion with Jiffy;
- Check for future expansion with Les fenêtres Nordistes.

1.2 TERMS OF REFERENCE (CONT'D)

(3) Other sites (location)

A preliminary study of different possibilities for location of a site will be done and recommendations given.

The town of Shippagan and the Planning Commission of the Peninsula will be directly involved in this portion of the work.

(4) Meeting with the steering-committee

A meeting will be held at this time for:

- receiving the results of the work done on the existing site;
- deciding on which new location should be studied further.

(5) New site (Study)

The following work will be done on the new site chosen by the steering-committee:

- plan of the property owners;
- subdivision plan (preliminary);
- required infrastructures (water, sewer, roads, etc...);
- preliminary cost estimate

(6) Preparation of report

A draft of the study will be prepared including a summary of the work and a conclusion.

1.2 TERMS OF REFERENCE (CONT'D)

(7) Steering-committee meeting

A third meeting with the steering-committee will be held at this time to review the draft of the report.

(8) Revision of the report will be done

Modifications to the report, following recommendations made by the steering-committee. Fifteen (15) copies in both official languages will be prepared and given to the steering-committee.

The distribution of the report will be as follows:

- The Town of Shippagan - 9 French copies
- The Planning Commission of the Peninsula - 1 French copy
- The Department of Commerce & Technology - 1 French copy and 4 English copies
- The Department of Regional Industrial Expansion - 1 French copy and 1 English copy
- Economic Expansion Commission of the Peninsula - 3 French copies and 10 English copies

SECTION NO 2 - EXISTING SITE

2.1 PRESENT LAND USE

Included plan No. 11-86-P-1 shows the existing land use for the Shippagan Industrial Park.

The park is located on the west side of 1st street (road 113) right at the entrance of the Town of Shippagan.

The existing land use according to town zoning can be divided in three categories as follows:

(1) Developped industrial: this is the property belonging to Jiffy which contains 3.9 hectares (9.6 acres)

(2) Industrial non-developped: this contains two properties belonging to the Economic Expansion Commission of the Peninsula, one containing 1.3 hectares (3.2 acres) on the north side and another one containing 0.65 hectares (1.6 acres) on the south side. There is also a private property containing 1.45 hectares (3.6 acres) on the south side of the property belonging to Jiffy.

(3) Residential: The properties on the west and south sides of the Industrial Park are zoned as residential.

The properties mentionned above are shown on plan No. 11-86-P-1 and constitute the Shippagan Industrial Park. Expansion is only possible on the south side because there are existing houses and commercial buildings on all other sides.

2.2 SITE DESCRIPTION

.1 Topography

Like the majority of the Town of Shippagan, the Industrial Park is flat with practically no natural slopes.

.2 Soil

The soil on top is very sandy sandstone, and gets bigger as you go deeper.

.3 Rock

The only test done went down to 3 meters and at that point, there was no sign of rock.

.4 Soil drainage

The soil has an excellent draining capacity. Tests done in 1981 at two (2) meters showed no water.

.5 Bearing capacity

The bearing capacity appears very good and should not create any problem for a foundation or road.

2.3 JIFFY PRODUCTS:

As requested by the steering-committee, we met with Mr. Alonzo Dupuis, P. Eng., manager of the Jiffy Products Plant. Following our meeting with Mr. Dupuis and our analysis, we can conclude that:

- The Jiffy Group has no expansion project for the immediate future for its installation in Shippagan;
- The existing buildings occupy only 14% of their property, thereby giving them lots of space for future expansion.

2.3 JIFFY PRODUCTS (CONT'D)

We also met with Mr. Gerard-Raymond Mallet, general manager of Jiffy Canada, to discuss the possibility of land exchange with them. Mr. Mallet was very receptive to the request and said that an official answer will be forthcoming to the Economic Expansion Commission of the Peninsula in the near future. We think, following this meeting, that it will be possible to make a land exchange with Jiffy Products.

2.4 LES FENETRES NORDISTES

Les Fenêtres Nordistes have expressed the desire to relocate their plant in the Industrial Park due to a lack of space at their present location. We discussed this with Mr. Eymard Chiasson of Fenêtres Nordistes. Mr. Chiasson said that they would need approximately 2325 square meters for their plant and that a 0.4 hectare (1 acre) property would be sufficient.

2.5 DEVELOPMENT OF THE E.E.C.P.'S PROPERTIES:

In this section of the study, a development plan was prepared for the two (2) properties belonging to the E.E.C.P.

Plan No. 11-86-P-2 shows the two (2) properties, the subdivision plan and the required infrastructure.

Properties located on the north A & C

This is the property located north of the Jiffy Products plant. By extending the Industrial street and by also extending the water and sewer services, and hydro services from 1st street, it would be possible to develop those two properties at a cost of $72,000.

2.5 DEVELOPMENT OF THE E.E.C.P.'S PROPERTIES (CONT'D)

The detailed estimate is shown in table 1 of page 11. These properties would contain 6800 square meters (1.7 acre) and 5600 square meters (1.4 acre) which in both cases could accommodate Les Fenêtres Nordistes.

Property south B

This property located south of the Industrial street could be developped fairly easily. The water would be hooked up to 1st street and the sanitary sewer from the existing collector going through the property. The infrastructure as shown on plan No. 11-86-P-2 would cost $26,000. Detailed estimate is included in table No 2 of page 12. This property would contain 6450 square meters (1.6 acre) and could also accommodate Les Fenêtres Nordistes.

2.6 POSSIBLE DEVELOPMENT ON THE EXISTING SITE

Plan No. 11-86-P-3, 11-86-P-4 and 11-86-P-5 show three possibilities for developping the existing property belonging to the E.E.C.P. and other adjacent properties.

2.7 ALTERNATIVE NO. 1 (11-86-P-3)

This alternative includes the development of the properties located north and south of the Jiffy plant as shown on plan No. 11-86-P-3.

The water, sewer and power services would all come from the 1st street and the street would be the extension of the Industrial street.

In this alternative, the following subdivision would be available:

North side: 2.9 hectares (7.1 acres) subdivided either in 4 big lots of ± 6000 m2 (1.5 acre) or 6 smaller properties.

2.6 Alternative No. 1 (11-86-P-3) (cont'd)

On the south side: 3.35 hectares (8.3 acres) subdivided in 4 properties of ± 7000 m2 (1.8 acres) or 6 properties a little smaller.

Table No. 3 of page 13 shows the preliminary cost estimate for the development, except that it does not include the land acquisition. The total cost is about $200,000. which gives about $32,000/hectare or $13,000/acre.

There are three reasons against the development of this alternative:

1- The services only serve one side of the street;

2- The private property to be acquired is zoned residential;

3- The proposed subdivision plan (cul de sac and narrow deep lots) are not functional for industrial development.

2.6.2 ALTERNATIVE NO. 2

In this alternative, the properties located south of the Jiffy plant would be developped and a land exchange would be made with Jiffy to obtain additional property on the south side. (see included plan No. 11-86-P-4)

Services would be the same as shown in alternative No. 1 in the previous pages.

The development cost, excluding land purchase, would be $150,000 as shown in table No. 4 of page 14.

This alternative would give 6 hectares (15 acres) of industrial land available, subdivided into 9 properties of ± 6000 m2 (1.5 acres) or again 15 smaller lots.

2.6.2 Alternative No. 2 (cont'd)

Here, the only disadvantage to the development of these properties is that a portion of these properties is zoned residential. It would be necessary to acquire 4.5 hectares (11 acres) of property for this alternative.

2.6.3 Alternative No. 3

This alternative is similar to alternative No. 2, where there would be a land exchange; but the development would be of smaller proportion and therefore, less land acquisition would be required.

Approximately 4.15 hectares (10.2 acres) of industrial land would be developped into 6 properties of varying sizes from 0.5 hectare (1 acre) to 0.65 hectare (1.6 acre).

The development cost, without the land acquisition, is $75,000, as shown in table No. 5 of page 15 or $18,000/hectare ($7350 acre). It would be required to purchase 2.6 hectares (6.5 acres) of property for this alternative.

2.7 DEVELOPMENT COST SUMMARY

Table No. 6 of page 16 shows a sumtary of the development cost.

2.9 CONCLUSION

As a conclusion to this section, the following points can be brought out:

- The properties adjacent to the Industrial Park are zoned residential
- Alternative No. 3, as shown on plan No. 11-86-P-5, shows the better land use at the best cost.

Table No. 1

SHIPPAGAN INDUSTRIAL PARK

COST ESTIMATE

E.E.C.P.'S PROPERTIES

E.E.C.P.'s properties - north A & C:

(A) Street

Excavation	350 m3	@ $2.00/m3	=	$700.00
Gravel	350 m3	@ $3.50/m3	=	1225.00
Crushed Gravel	180 m3	@ $15/m3	=	2700.00
Ditch	220 m	@ $3.00/m	=	660.00
Culvert	10 m	@ $60/m	=	600.00
Asphalt	15 m3	@ $150/m3	=	2250.00
Contingency	10%		=	800.00
Engineering	15%		=	1300.00
TOTAL				$10487.00

(B) Water

Connecting to existing line	1	@ $1500/unit	=	$1500.00
Valve	2	@ $600/unit	=	1200.00
Pipe	122	@ $55/m	=	6710.00
Fire hydrant	1	@ $1500/unit	=	1500.00
Street repairs	1	@ $2000/unit	=	2000.00
CNR crossing	1	@ $3000/unit	=	3000.00
Contingency	10%		=	1500.00
Engineering	15%		=	2300.00
TOTAL				$19710.00

(C) Sanitary sewer

CNR crossing	1	@ $3000/unit	=	$3000.00
Manholes	1	@ $1700/unit	=	1700.00
Pipe	115m	@ $55/m	=	6325.00
Street repairs	1	@ $2000/unit	=	2000.00
Contingency	10%		=	1300.00
Engineering	15%			2100.00
TOTAL				$16425.00

(D) Electricity

Three phases including poles	100	@ $30/m	=	$3000.00
TOTAL				$3000.00

(E) Easement $2000.00

Total development cost $72,622.00

Say.....$72,000.00

Table No. 2

SHIPPAGAN INDUSTRIAL PARK

COST ESTIMATE

E.E.C.P.'S PROPERTY

E.E.C.P.'s property - south (B):

(A) Street

Excavation	50 m³	@ $2.00/m³	=	$100.00
Gravel	50 m³	@ $3.50/m³	=	175.00
Crushed gravel	25 m³	@ $15/m³	=	375.00
Culvert	6 m	@ $60/m	=	360.00
Asphalt	20 m³	@ $150/m³	=	3000.00
Contingency	10%		=	150.00
Engineering	15%		=	220.00
TOTAL				$4380.00

(B) Water

Connecting to existing line	1	@ $1500/unit	=	$1500.00
Valve	2	@ $600/unit	=	1200.00
Pipe	75m	@ $55/m	=	4125.00
Fire hydrant	1	@ $1500/unit	=	1500.00
Street repair	1	@ $1000/unit	=	1000.00
CNR repair	1	@ $3000/unit	=	3000.00
Contingency	10%		=	1200.00
Engineering	15%		=	2100.00
TOTAL				$15625.00

(C) Sanitary sewer

Manholes	1	@ $1700/unit	=	1700.00
Pipe	16m	@ $55/m	=	880.00
Contingency	10%		=	250.00
Engineering	15%		=	500.00
TOTAL				$3300.00

(D) Electricity

Three phases including poles	80	@ $30/m	=	$2400.00
TOTAL				$2400.00

TOTAL cost of development	$25,705.00
	==========

Say.....$26,000.00

Table No. 3

SHIPPAGAN INDUSTRIAL PARK

COST ESTIMATE

EXISTING SITE

Possible development - alternative No. 1

(A) Street

Excavation	1100m3	@ $2.00/m3	=	$2200.00
Gravel	1100m3	@ $3.50/m3	=	3850.00
Crushed gravel	370m3	@ $15/m3	=	5550.00
Ditch	900m	@ $3.00/m	=	2700.00
Culvert	60m	@ $60/m	=	3600.00
Asphalt	420m3	@ $150/m3	=	63000.00
Contingency	10%		=	8090.00
Engineering	15%		=	13348.00
TOTAL				$102338.00

(B) Water

Connecting to existing line	2	@ $1500/unit	=	$3000.00
Valve	5	@ $600/unit	=	3000.00
Pipe	480m	@ $55/m	=	26400.00
Fire hydrant	3	@ $1500/unit	=	4500.00
Street repair	2	@ $2000/unit	=	4000.00
CNR repair	2	@ $3000/unit	=	6000.00
Contingency	10%		=	4890.00
Engineering	15%		=	7728.00
TOTAL				$59328.00

(C) Sanitary sewer

CNR repair	1	@ $3000/unit	=	$3000.00
Manholes	2	@ $1700/unit	=	3400.00
Pipe	240m	@ $55/m	=	13200.00
Street repair	1	@ $2000/unit	=	2000.00
Contingency	10%		=	2000.00
Engineering	15%		=	3285.00
TOTAL				$26885.00

(D) Electricity

Three phases including poles	240	@ $30/m	=	$7200.00
TOTAL				$7200.00

TOTAL cost development $195,751.00

Say.....$200,000.00

Table No. 4

SHIPPAGAN INDUSTRIAL PARK

COST ESTIMATE

EXISTING SITE

Possible development - alternative No 2

(A) Street

Excavation	1000m3	@ $2.00/m3	=	$2000.00
Gravel	1000m3	@ $3.50/m3	=	3500.00
Crushed gravel	500m3	@ $15/m3	=	7500.00
Ditch	640m	@ $3.00/m	=	2020.00
Culvert	80m	@ $60/m	=	4800.00
Asphalt	260m3	@ $150/m3	=	39000.00
Contingency	10%		=	5800.00
Engineering	15%		=	9600.00
TOTAl				$74220.00

(B) Water

Connecting to existing line	1	@ $1500/unit	=	$1500.00
Valve	4	@ $600/unit	=	2400.00
Pipe	360m	@ $55/m	=	19800.00
Fire hydrant	3	@ $1500/unit	=	4500.00
Street repair	1	@ $2000/unit	=	2000.00
CNR repair	1	@ $3000/unit	=	3000.00
Contingency	10%		=	3000.00
Engineering	15%		=	5400.00
TOTAL				$41600.00

(C) Sanitary sewer

Manholes	3	@ $1700/unit	=	5100.00
Pipe	225	@ $55/m	=	12375.00
Contingency	10%		=	1700.00
Engineering	15%		=	2800.00
TOTAL				$21975.00

(D) Electricity

Three phases including poles	370	@ $30/m	=	$11100.00
TOTAL				$11100.00

TOTAL development cost $148,895.00

Say....$150,000.00

Table No. 5

SHIPPAGAN INDUSTRIAL PARK

COST ESTIMATE

EXISTING SITE

Possible development - alternative No. 2

(A) Street

Excavation	500m3	@ $2.00/m3	=	$1000.00
Gravel	500m3	@ $3.50/m3	=	1750.00
Crushed gravel	170m3	@ $15.00/m3	=	2550.00
Ditch	360m	@ $3.00/m	=	1080.00
Culvert	40m	@ $60/m	=	2400.00
Asphalt	170m3	@ $150/m3	=	25500.00
Contingency	10%		=	1000.00
Engineering	15%		=	2000.00
TOTAL				$37280.00

(B) Water

Connecting to existing line	1	@ $1500/unit	=	$1500.00
Valve	2	@ $600/unit	=	1200.00
Pipe	230	@ $55/m	=	12650.00
Fire hydrant	1	@ $1500/unit	=	3000.00
Street repair	1	@ $2000/unit	=	2000.00
CNR repair	1	@ $3000/unit	=	3000.00
Contingency	10%		=	2000.00
Engineering	15%		=	3400.00
TOTAL				$28750.00

(C) Electricity

Three phases including poles	240	@ $30/m	=	$7200.00
TOTAL				$7200.00

TOTAL development cost	$73,230.00
	==========

Say....$75,000.00

Table No. 6

SHIPPAGAN INDUSTRIAL PARK

COST SUMMARY

EXISTING SITE

Location	Area	Total development cost	Development cost per hectare	Development cost per acre
Property belonging to the E.E.C.P. - A & C -	12,400 m2 (3.06 acres)	$ 72,000.00	$58,000.00	$23,000.00
Property belonging to the E.E.C.P. - B -	6,450 m2 (1.6 acre)	$ 26,000.00	$40,000.00	$16,000.00
Possible development Alternative No. 1	62,500 m2 (15.4 acres)	$200,000.00	$32,000.00	$13,000.00
Possible development Alternative No. 2	60,000 m2 (14.8 acres)	$150,000.00	$25,000.00	$10,000.00
Possible development Alternative No. 3	41,500 m2 (10.3 acres)	$75,000.00	$18,000.00	$ 7,300.00

SECTION NO. 3 - NEW SITE

3.1 LOCATION OF NEW SITE:

The location of the new site was done in conjunction with the Town of Shippagan and the Peninsula Planning Commission.

A review of the town development and the existing town plan shows that the only available properties are those located on the west side of road 113 in the southern section of the town.

The town representative advises us that the town should receive a large property from the province (tentatively January 1988) in this area of town and that it would be available for industrial use.

After reviewing the situation, the steering-committee gave its approval, for the consultant to study property for future development.

3.2 PRESENT LAND USE:

Plan No. 11-86-P-6 shows the present land use. Presently, there are 43 hectares of wooded land, as well as wells and water reservoir for the town.

On the included plan, we have shown the required protection zone with and without sanitary sewer. The other properties around are privately owned and most of them are used as gravel pit.

3.3 DEVELOPMENT CRITERIA:

In cooperation with the steering-committee, the following development criteria were established:

- size:	± 12 hectares
- 1st phase:	2 lots
- Size of subdivision	90 meters X 90 meters
- required infrastructure	sanitary sewer
	water
	electricity - 3 phases
	telephone
	road access
	asphalted street
	open ditch
- conforming land use	

3.4 PROTECTION ZONE

The protection zones shown on plan No. 11-86-P-6 are those included in the master plan of the Town of Shippagan. These protection zones are required so that the existing wells for the town fresh water supply will not be contaminated.

The Town of Shippagan has asked for a hydrogeological study of its water resources to determine exactly what are the protection zones required and what kind of development would be possible in that area.

3.5 DEVELOPMENT PLAN:

Using the criteria established with the steering-committee and the existing restraints on the site, two subdivision plans were done as shown on plan No. 11-86-P-7 and 11-86-P6.

3.5.1 SUBDIVISION PLAN NO. 4 AND THE PROPOSED WORK:

Size and subdivision:

The industrial site shown on plan No. 11-86-P-7 has a total of 11 hectares (27 acres). The properties are divided in 90 meter modules (300 feet), with a possibility of 11 one-hectare (2.5 acres) properties or at the other extreme, 19 properties between 0.5 hectare (± 1 acre) and 1 hectare.

The first phase has 2 properties, each of approximately 1 hectare or again 4 properties of 0.5 hectare, depending on the type of subdivision chosen.

Sanitary sewer:

The sanitary sewer can be done either by hooking up to the existing collector on the east side or on the existing pipe along "le chemin du réservoir". Since the capacity of the collector is much greater, we decided to go that route.

Watermain:

The town wells and reservoir are located right on the site, so there would be no problem in water sewer.

3.5.1 SUBDIVISION PLAN NO. 4 AND THE PROPOSED WORK:

-Electricity and telephone:

Three-phase power already exists up to the site and telephone is also available.

-Road access:

As far as location is concerned, the road access is excellent because it is located adjacent to route 113 at the entrance of this town.

The "rue du réservoir" is adequate; however, the right of way is very narrow at the beginning and should be widened eventually.

3.5.2 SUBDIVISION PLAN NO. 5 AND PROPOSED WORK:

Size and subdivision:

Plan No. 11-86-P-8 shows the proposed subdivision plan which has 18.5 hectares (45.6 acres) on a property with lots of 90 meters (300 feet) modules giving 17 properties of approximately 8300 m2 (2 acres), or, 34 properties of 4000 m2 (1 acre).

The other development parameters are exactly the same as for subdivision No. 1, except that the external services are farther and therefore more costly.

3.6 DEVELOPMENT COST

3.6.1 Subdivision plan No. 1

The development cost for subdivision plan No. 1 are shown in table 7 & 8 of pages 22 and 23, and are:

External services - $800,000.00

Interior services - $280,000.00

3.6.2 Subdivision plan No. 2

The development costs for subdivision plan No. 2 are shown in table 9 & 10 of pages 24 and 25, and are as follows:

External services - $700,000.00

Interior services - $280,000.00

3.7 CONCLUSION

After studying this new site, we can conclude that:

- the development of the site will depend directly on the results of the hydrogeological study.
- Assuming that the hydrogeological study will not reveal any problem with this development, subdivision No. 2 would be the preferred one.

Table No. 7

SHIPPAGAN INDUSTRIAL PARK

COST ESTIMATE

EXTERNAL SERVICES - NEW SITE

Subdivision No. 4

(A) Street

Excavation	5400m3	@ $2.00/m3	=	$10800.00
Gravel	5400m3	@ $3.50/m3	=	10800.00
Crushed gravel	2700m3	@ $15/m3	=	40500.00
Ditch	1240m	@ $3/m	=	3720.00
Asphalt	2730m2	@ $150/m3	=	409500.00
Contingency	10%		=	48342.00
Engineering	15%		=	79764.00
TOTAL				$611526.00

(B) Sanitary sewer

Pipe	770m	@ $60/m	=	$46200.00
Lift station	1 unit		=	100000.00
Contingency	10%		=	15000.00
Engineering	15%		=	24000.00
TOTAL				$185200.00

TOTAL development cost	$796,726.00
	==========

Say....$800,000.00

Table No. 8

SHIPPAGAN INDUSTRIAL PARK

COST ESTIMATE

INTERNAL SERVICES - NEW SITE

Subdivision No. 4

(A) Street

Excavation	2340m3	@ $2.00/m3	=	$4680.00
Gravel	2340m3	@ $3.50/m3	=	8190.00
Crushed gravel	1170m3	@ $15/m3	=	17550.00
Culvert	36m	@ $60/m	=	2160.00
Ditch	720m	@ $3.00/m	=	9360.00
Asphalt	384m3	@ $150/m3	=	87600.00
Contingency	10%		=	12000.00
Engineering	15%		=	21000.00
TOTAL				$162540.00

(B) Water

Connecting to existing line	1	@ $1500/unit	=	$1500.00
Valve	5	@ $600/unit	=	3000.00
Pipe	610m	@ $55/m	=	33550.00
Fire hydrant	4	@ $1500/unit	=	6000.00
Street repair	1	@ $1000/unit	=	1000.00
Contingency	10%		=	4500.00
Engineering	15%		=	7400.00
TOTAL				$56950.00

(C) Sanitary sewer

Manholes	5	@ $1700/unit	=	$8500.00
Pipe	560m	@ $55/m	=	30000.00
Contingency	10%		=	3900.00
Engineering	15%		=	6400.00
TOTAL				$49600.00

TOTAL development cost	$269,010.00

Say....$280,000.00

Table No. 9

SHIPPAGAN INDUSTRIAL PARK

COST ESTIMATE

EXTERNAL SERVICES - NEW SITE

Subdivision No. 5

(A) Street

Excavation	4000m3	@ $2.00/m3	=	$8000.00
Gravel	4000m3	@ $3.50/m3	=	14000.00
Crushed gravel	2000m3	@ $15/m3	=	30000.00
Ditch	2200m3	@ $3.00/m	=	6600.00
Asphalt	2000m3	@ $150/m3	=	300000.00
Contingency	10%		=	35860.00
Engineering	15%		=	59169.00
TOTAL				$453629.00

(B) Sanitary sewer

Force main	1300	@ $60/m	=	$78000.00
Lift station	1	@ $100,000/unit	=	100000.00
Contingency	10%		=	17800.00
Engineering	15%		=	29370.00
TOTAL				$225170.00

(C) Water

Pipe	180	@ $55/m	=	$9900.00
Valve	1	@ $600/unit	=	600.00
Contingency	10%		=	1560.00
Engineering	15%		=	2623.00
TOTAL				$14713.00

TOTAL development cost $693,512.00

Say...$700,000.00

Table No. 10

SHIPPAGAN INDUSTRIAL PARK

COST ESTIMATE

INTERNAL SERVICE - NEW SITE

Subdivision No. 5: Costs are similar to those in subdivision No 1, that is:

A - Street	-	$162,540.00
B - Water	-	56,950.00
C - Sewer	-	49,600.00
		$269,090.00

Say...$280,000.00

SECTION NO. 4 - RECOMMENDATIONS

4.1 ANALYSIS

If we are to consider the long-term development of the Shippagan Industrial Park, the present two properties belonging to the E.E.C.P. are not sufficient and other alternatives have to be reviewed.

Table No. 11 of page 28 is a summary of the development cost without the land acquisition cost.

Alternative No. 3, as shown on plan No. 11-86-P-5 is the best one from the financial point of view.

Because the results of the hydrogeological study will not be known for at least another year alternative No. 3 is the only one that can be recommended at this time.

4.2 Recommendations

Following this study and our meetings with the steering-committee, we have the following recommendations to offer:

1- That the Shippagan Industrial Park be developped as shown on plan No. 11-86-P-5 in alternative No. 3.

2- That the development of Phase 1 in alternative No. 3 be done as soon as the required properties have been bought and/or exchanged.

3- That the properties shown on plan No. 11-86-P-8 (new site) be reserved for the long-term industrial development.

4.3 Action plan

We propose the following action plan regarding the development of alternative No. 3.

1- Rezoning as required

2- Land exchange with Jiffy

3- Property acquisition

4- Engineering of the project

5- Construction

Once you have reached No. 2, depending on the land requirement, it would be possible to do phase No. 1 at a development cost of approximately $30,000, as shown on table No. 12 of page 29.

Table No. 11

Development cost summary

ALTERNATIVE	AREA	TOTAL DEVELOPMENT COST	COST PER HECTARE	COST PER ACRE
1	62,500 m2 (15.5 acres)	$200,000.00	$32,800.00	$13,000.00
2	60,000 m2 (14.8 acres)	$150,000.00	$25,000.00	$10,000.00
3	41,500 m2 (10.3 acres)	$75,000.00	$18,000.00	$ 7,300.00
4	110,000 m2 (27 acres)	$1,080,000.00	$97,000.00	$39,300.00
5	185,000 m2 (46 acres)	$635,000.00	$53,000.00	$21,200.00

Table No. 12

SHIPPAGAN INDUSTRIAL PARK

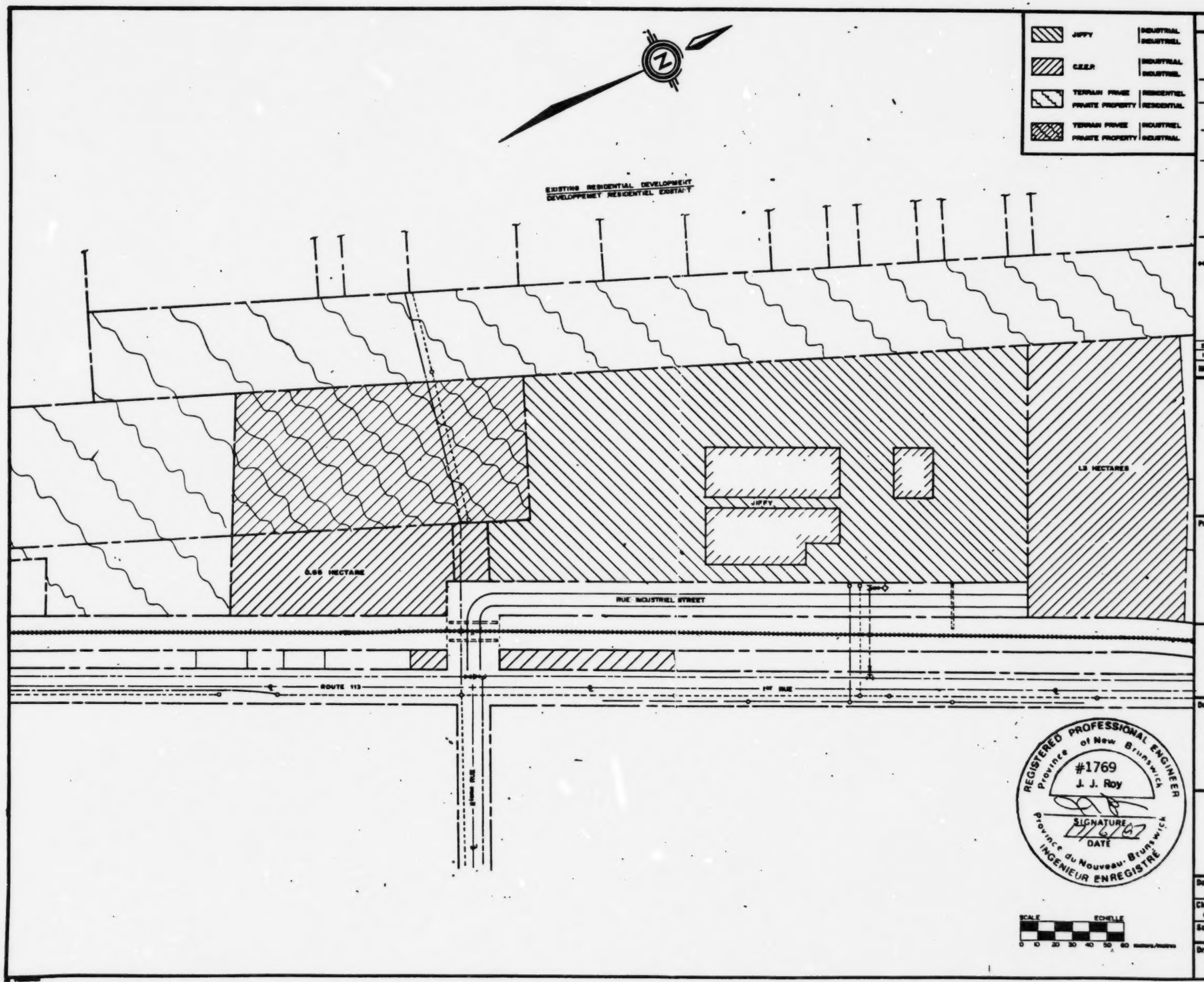
COST ESTIMATE

ALTERNATIVE NO. 3 - PHASE 1

(A) Street				
Excavation	50m3	@ $2.00/m3	=	$100.00
Gravel	50m3	@ $3.50/m3	=	175.00
Crushed gravel	25m3	@ $15/m3	=	375.00
Culvert	6m	@ $60/m	=	360.00
Asphalt	20m3	@ $150/m3	=	3000.00
Contingency	10%		=	150.00
Engineering	15%		=	220.00
TOTAL				$4380.00
(B) Water				
Connecting to existing line	1	@ $1500/unit	=	$1500.00
Valve	2	@ $600/unit	=	1200.00
Pipe	75m	@ $55/m	=	4125.00
Fire hydrant	1	@ $1500/unit	=	1500.00
Street repair	1	@ $1000/unit	=	1000.00
CNR repair	1	@ $3000/unit	=	3000.00
Contingency	10%		=	1200.00
Engineering	15%		=	2100.00
TOTAL				$15625.00
(C) Sanitary sewer				
Manhole	1	@ $1700/unit	=	$1700.00
Pipe	16m	@ $55/m	=	880.00
Contingency	10%		=	250.00
Engineering	15%		=	500.00
TOTAL				$3300.00
(D) Electricity				
Three phases including poles	80	@ $30/m	=	$2400.00
TOTAL				$2400.00
(E) Contingency				$5000.00
TOTAL				$30,705.00

Say...$30,000.00

Drawing Number 11-86-P-1 Numéro du Plan



NOTES

LEGENDE / LEGEND

- CONDUITE D'EAU EXIST. EXISTING WATERMAIN
- CONDUITE D'EGOUT SAN. EXIST. EXIST. SANITARY SEWER
- CONDUITE D'EGOUT PLUVIALE EXIST. EXISTING STORM SEWER
- CONDUITE DE REFOULEMENT EXIST. EXISTING FORCEMAIN
- REGARD D'INSPECTION EXIST. EXISTING MANHOLE
- BORNE D'INCENDIE EXIST. EXISTING FIRE HYDRANT
- LIGNE DE PROPRIETE PROPERTY LINE
- VOIE FERRE RAILROAD

NO	DATE	REVISIONS
2	10-5-87	GENERAL
1	20-10-87	GENERAL REVISIONS

PARC INDUSTRIEL DE
SHIPPAGAN
INDUSTRIAL PARK

Project / Projet
ETUDES D'UTILISATION FONCTIONNELLE DES TERRAINS

FONCTIONAL LAND USE STUDY

ROY CONSULTANT Ltée / Ltd.

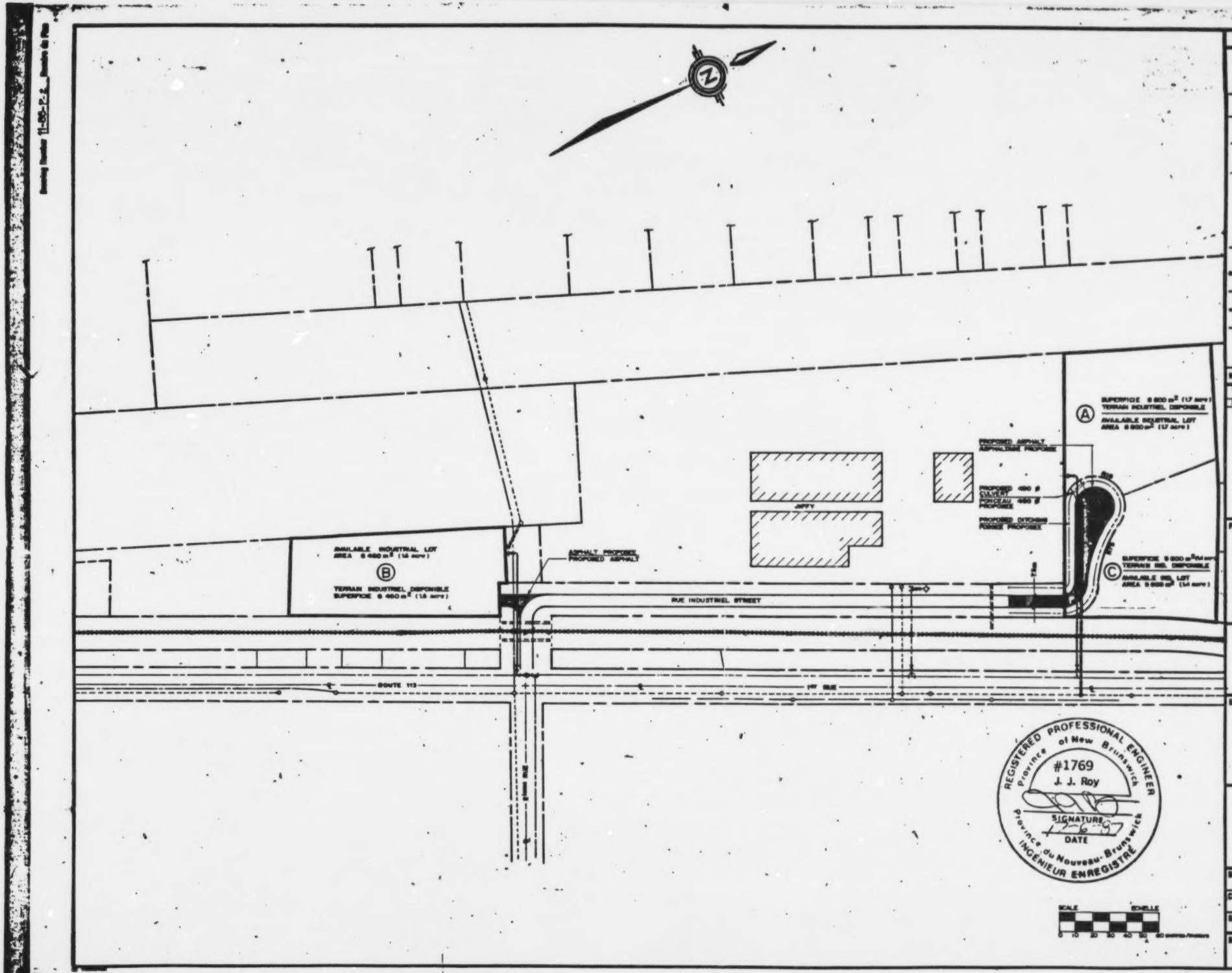
Drawing Title / Titre du Plan
UTILISATION PRESENTE DES TERRAINS

EXISTING LAND USE

REGISTERED PROFESSIONAL ENGINEER
Province of New Brunswick
#1769
J. J. Roy
SIGNATURE
DATE
Province du Nouveau-Brunswick
INGENIEUR ENREGISTRE

SCALE / ECHELLE
0 10 20 30 40 50 60 mètres/metres

Design by: Design par:	Drawn by: Dessiné par: W.A.D / J.C.A
Checked by: Vérifié par:	Date: 03-03-87
Scale: Echelle:	Sheet: 1 of/de 1 Feuille:
Drawing Number: Numéro du Plan: 11-86-P-1	Rev. 2


N
LEGENDE / LEGEND
AVAILABLE INDUSTRIAL LOT
AREA 6 480 m² (1.6 acres)
TERRAIN INDUSTRIEL DISPONIBLE
SUPERFICIE 6 480 m² (1.6 acres)
ASPHALT PROPOSE
PROPOSED ASPHALT
RUE INDUSTRIEL STREET
ROUTE 113
JETTY
PROPOSED ASPHALT
ASPHALTAGE PROPOSE
PROPOSED CULVERT
PONCEAU PROPOSE
PROPOSED DITCHING
FOSSE PROPOSE
SUPERFICIE 6 800 m² (1.7 acres)
TERRAIN INDUSTRIEL DISPONIBLE
AVAILABLE INDUSTRIAL LOT
AREA 6 800 m² (1.7 acres)
A
B
C
NO
DATE
REVISIONS
1
2
3
LOCATION OF CUL-DE-SAC
LOCALISATION DU CUL-DE-SAC
REMERAL
PARC INDUSTRIEL DE
SHIPPAGAN
INDUSTRIAL PARK
ETUDES D'UTILISATION FONCTIONNELLE DES TERRAINS
FONCTIONAL LAND USE STUDY
ROY CONSULTANT Ltée / Ltd.
DEVELOPPEMENT DES TERRAINS EXISTANTS APPARTENANT A LA C.E.E.P.
DEVELOPMENT OF C.E.E.P. OWNED LANDS
REGISTERED PROFESSIONAL ENGINEER
Province of New Brunswick
#1769
J. J. Roy
SIGNATURE
DATE
Province du Nouveau-Brunswick
INGÉNIEUR ENREGISTRÉ
SCALE
ECHELLE
13-04-87
2 of/de 2
11-86-P-2

Drawing Number 11-86-P-3 Numéro du Plan

NOTES

LEGENDE / LEGEND

- VOIE FERRÉE RAILROAD
- PROPOSED WATER MAIN CONDUITE D'EAU PROPOSÉE
- PROPOSED SAN. SEWER ÉGOUT SAN. PROPOSÉE
- PROPOSED STORM SEWER ÉGOUT PLUVIALE PROPOSÉE
- PROPOSED SANITARY M.H. R.I. SANITAIRE PROPOSÉ
- PROPOSED STORM M.H. R.I. PLUVIALE PROPOSÉE
- CONDUITE D'EAU EXIST. EXISTING WATERMAIN
- CONDUITE D'ÉGOUT SAN. EXIST. EXIST. SANITARY SEWER
- CONDUITE D'ÉGOUT PLUVIALE EXIST. EXISTING STORM SEWER
- CONDUITE DE REFOULEMENT EXIST. EXISTING FORCEMAIN
- REGARD D'INSPECTION EXIST. EXISTING MANHOLE
- BORNE D'INCENDIE EXIST. EXISTING FIRE HYDRANT
- LIGNE DE PROPRIÉTÉ PROPERTY LINE

NO.	DATE	REVISIONS
2	10-09-97	GENERAL
1	97-09-17	JIFFY BUILDING BATIMENT JIFFY

PARC INDUSTRIEL DE
SHIPPAGAN
INDUSTRIAL PARK

Project / Projet
ETUDES D'UTILISATION FONCTIONNELLE DES TERRAINS

FONCTIONAL LAND USE STUDY

ROY CONSULTANT Ltée / Ltd.

Drawing Title / Titre du Plan
DEVELOPPEMENT POSSIBLE ALTERNATIVE NO 1

POSSIBLE DEVELOPMENT ALTERNATIVE NO. 1

REGISTERED PROFESSIONAL ENGINEER Province of New Brunswick #1769 J. J. Roy SIGNATURE 7-6-97 DATE Province du Nouveau-Brunswick INGÉNIEUR ENREGISTRÉ

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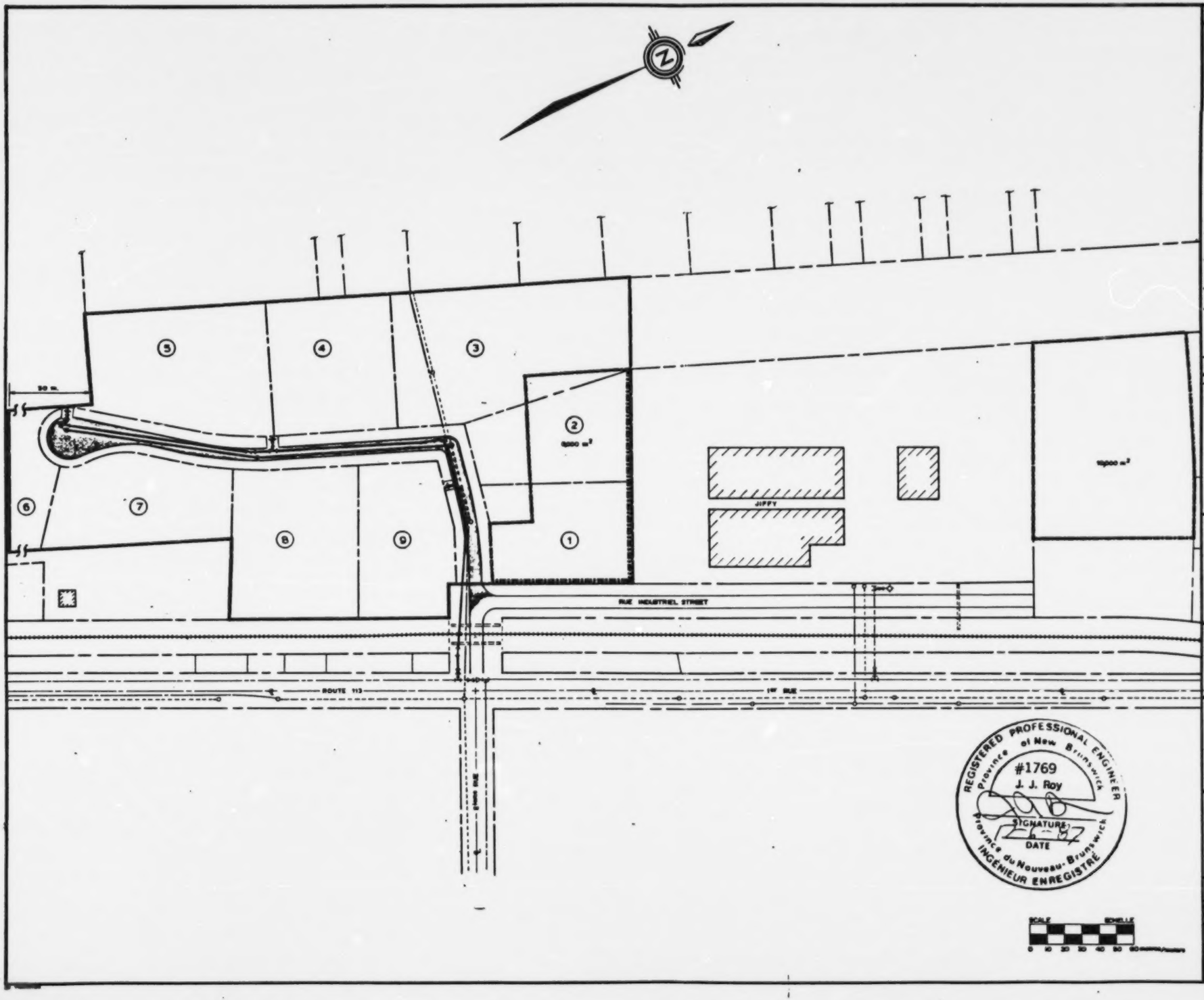
Drawn by: Dessiné par:
Checked by: Vérifié par:
Date: 09-09-97
Scale: Échelle:
Sheet: 2 of/de 4
Feuille:
Drawing Number: 11-86-P-3
Numéro du Plan:
Rev. 2

Drawing Number 11-86-P-4 Numéro du Plan



NOTES

LEGENDE / LEGEND

- CONDUITE D'EAU EXIST. EXISTING WATERMAIN
- CONDUITE D'EGOUT SAN. EXIST. EXIST. SANITARY SEWER
- CONDUITE D'EGOUT PLUVIALE EXIST. EXISTING STORM SEWER
- CONDUITE DE REFOULEMENT EXIST. EXISTING FORCEMAIN
- REGARD D'INSPECTION EXIST. EXISTING MANHOLE
- BORNE D'INCENDIE EXIST. EXISTING FIRE HYDRANT
- LIGNE DE PROPRIETE PROPERTY LINE
- VOIE FERREE RAILROAD
- CONDUITE D'EGOUT SAN. PROP. PROPOSED SAN. SEWER
- CONDUITE D'EAU PROPOSEE PROPOSED WATERMAIN
- PROPOSED DEVELOPMENT DEVELOPPEMENT PROPOSE
- LAND TO BE EXCHANGED TERRAIN A ETRE ECHANGE

NO	DATE	REVISIONS
1	13-04-87	GENERAL

PARC INDUSTRIEL DE
SHIPPAGAN
INDUSTRIAL PARK

Project / Projet

ETUDE D UTILISATION FONCTIONNELLE DES TERRAINS

FUNCTIONAL LAND USE STUDY

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Drawing Title / Titre du Plan

DEVELOPPEMENT POSSIBLE ALTERNATIVE NO. 2

POSSIBLE DEVELOPMENT ALTERNATIVE NO. 2

REGISTERED PROFESSIONAL ENGINEER Province of New Brunswick #1769 J. J. Roy SIGNATURE DATE Province du Nouveau-Brunswick INGÉNIEUR ENREGISTRÉ

SCALE ECHELLE 0 10 20 30 40 50 60 Metres

Design by: Design par:	Drawn by: Dessiné par: WAB / ACA
Checked by: Vérifié par:	Date: 13-04-87
Scale: Echelle:	Sheet: 4 of/de 6 Feuille:
Drawing Number: Numéro du Plan: 11-86-P-4	Rev. 1

LIMITE DU PARC INDUSTRIEL
INDUSTRIAL PARK BOUNDARY

PROPOSED RAILWAY
PASSAGE FERROVIAIRE PROPOSE

RUE PUTOIS - FUTURE STREET

PROPOSED INDUSTRIAL
INDUSTRIE PROPOSE

PROPOSED RETAIL
VENTE PROPOSE

PROPOSED OFFICE
BUREAU PROPOSE

PROPOSED HOTEL
HOTEL PROPOSE

PROPOSED RESIDENTIAL
RESIDENTIEL PROPOSE

PROPOSED PARK
PARC PROPOSE

PROPOSED PUBLIC USE
UTILITE PUBLIQUE PROPOSE

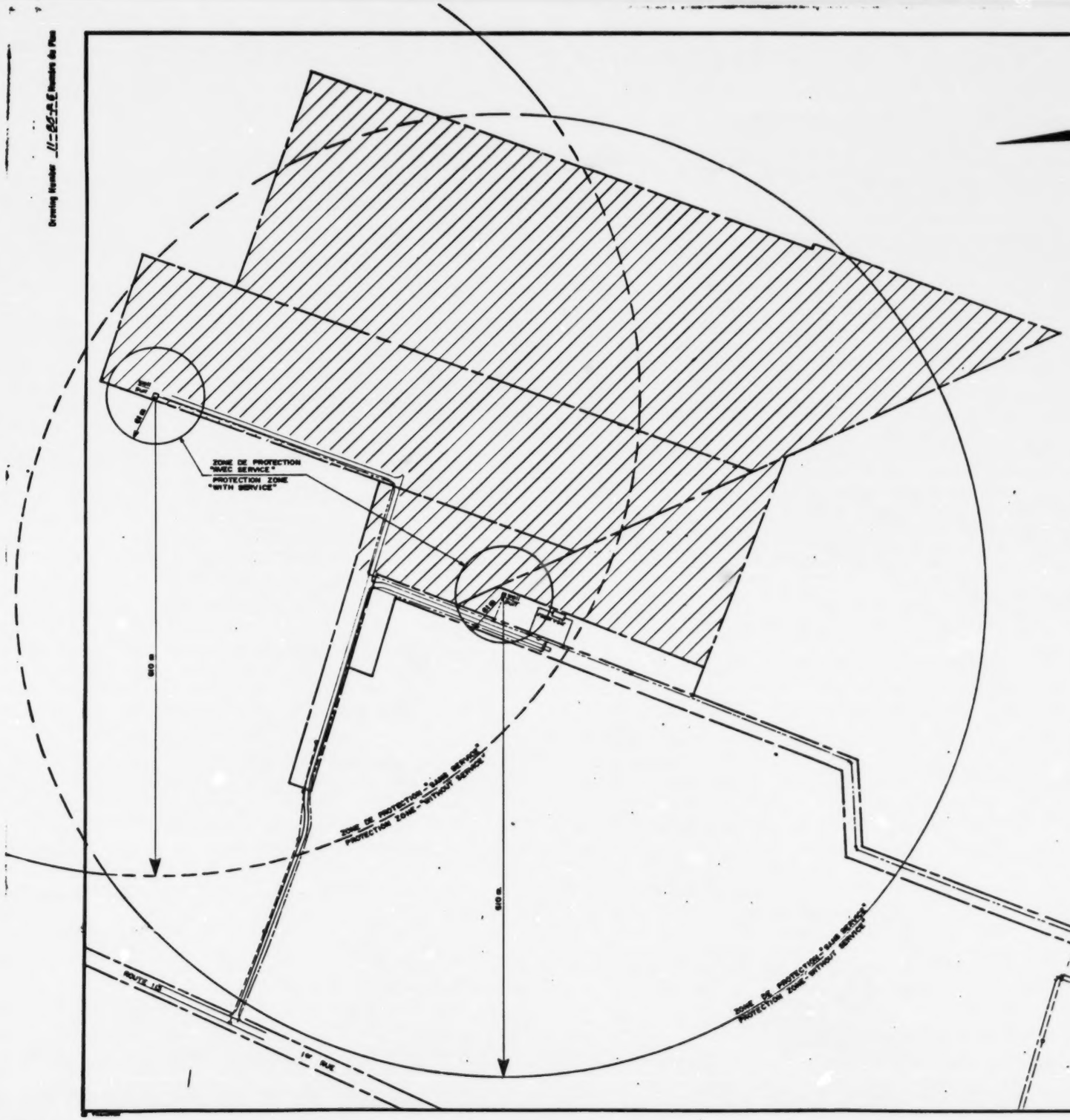
PROPOSED INSTITUTIONAL
INSTITUTIONNEL PROPOSE

PROPOSED RECREATIONAL
RECREATIF PROPOSE

PROPOSED COMMERCIAL
COMMERCIAL PROPOSE

PROPOSED INDUSTRIAL
INDUSTRI

Drawing Number 11-86-P-6 Numéro du Plan



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Province of New Brunswick
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J. J. Roy
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DATE
Province du Nouveau-Brunswick
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NOTES

EXISTING WATERMAIN
CONDUITE D'EAU EXIST.

EXISTING SANITARY SEWER
EGOUT SANITAIRE EXIST.

EXIST. STORM SEWER
EGOUT PLUVIAL EXIST.

EXIST. FORCE MAIN
CONDUITE DE REFOULEMENT EXIST.

TERRAIN D'INTERVENTION EXIST.
EXIST. MANHOLE

PROPERTY LINE
LIGNE DE PROPRIETE

EXIST. VALVE
VANNE EXISTANTE

EXIST. FIRE HYDRANT
BORNE INCENDIE EXIST.

PROPOSED WATERMAIN
CONDUITE PRINCIPALE PROPOSE

PROPOSED SAN. SEWER
EGOUT SANITAIRE PROPOSE

PROPOSED STORM SEWER
EGOUT PLUVIAL PROPOSE

TERRAIN CEDE A LA VILLE DE SHIPPAGAN
PROPERTIES TO BE TURNED OVER TO THE TOWN OF SHIPPAGAN

NO	DATE	REVISIONS
2	10-6-87	GENERAL
1	09-06-87	REVISIONS GENERAL

PARC INDUSTRIEL DE
SHIPPAGAN
INDUSTRIAL PARK

Project / Projet
ETUDES D'UTILISATION FONCTIONNELLE DES TERRAINS

FONCTIONAL LAND USE STUDY

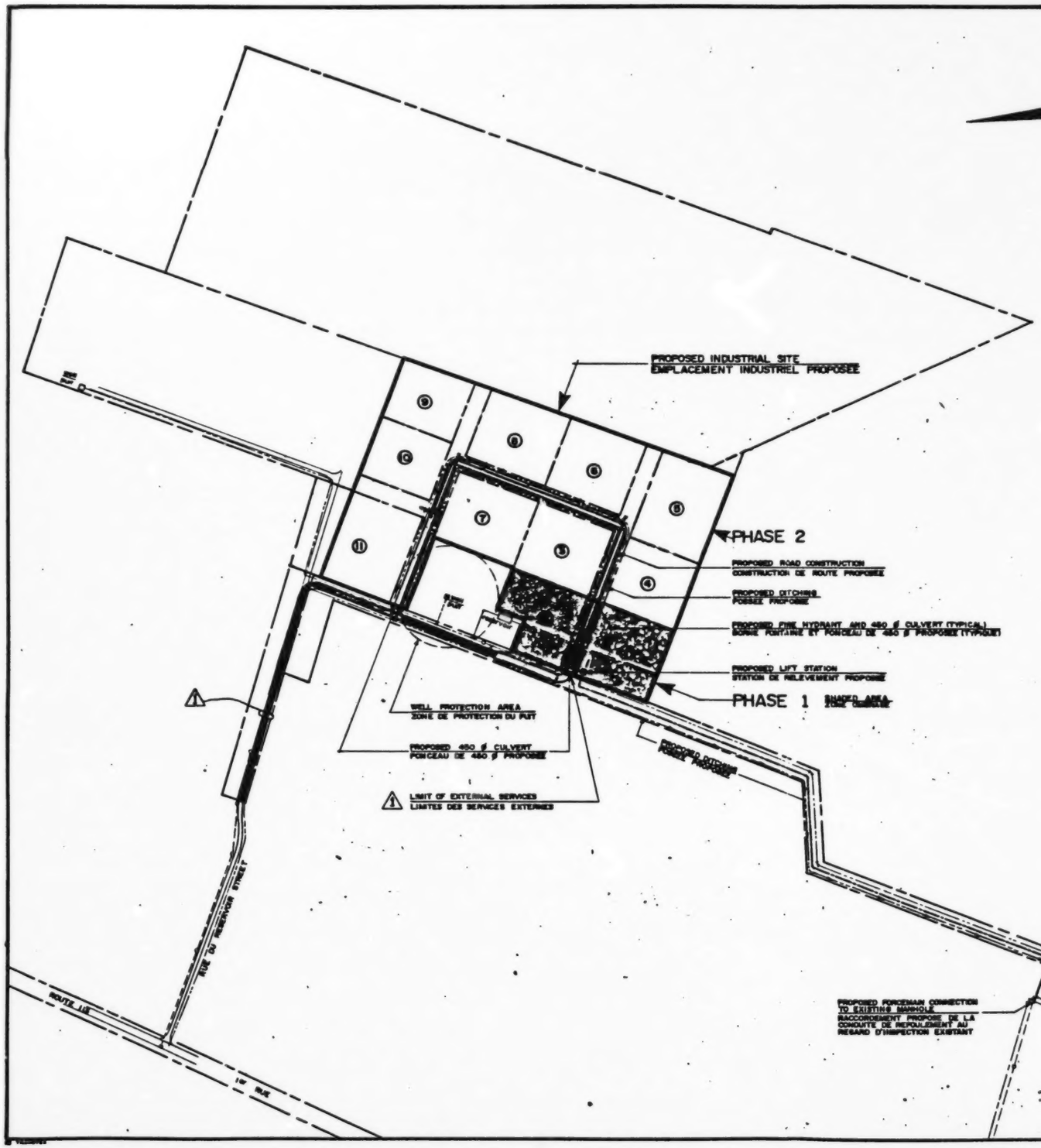
ROY CONSULTANT Ltée / Ltd.

Drawing Title / Titre du Plan
PLAN DE LOCALISATION ALTERNATIVE

ALTERNATIVE LOCATION PLAN

Design by: Dessin par:
Drawn by: Dessiné par: J.C.A
Checked by: Vérifié par:
Date: 08-05-87
Scale: Echelle:
Sheet: 6 of/de 6
Drawing Number: Numéro du Plan: 11-86-P-6
Rev: 2

Drawing Number 11-86-P-7 Numéro du Plan



NOTES

EXISTING WATERMAIN
CONDUITE D'EAU EXIST.

EXISTING SEWER
EGOUT SANITAIRE EXIST.

EXIST. STORM SEWER
EGOUT PLUVIALE EXIST.

EXIST. FORCE MAIN
CONDUITE DE REFOULEMENT EXIST.

REGARD D'INSPECTION EXIST.
EXIST. MANHOLE

PROPERTY LINE
LIGNE DE PROPRIETE

EXIST. VALVE
VANNE EXISTANTE

EXIST. FIRE HYDRANT
BORNE INCENDIE EXIST.

PROPOSED WATERMAIN
CONDUITE PRINCIPALE PROPOSEE

PROPOSED SAN SEWER
EGOUT SANITAIRE PROPOSEE

PROPOSED STORM SEWER
EGOUT PLUVIALE PROPOSEE

NO.	DATE	REVISIONS
2	10-8-87	GENERAL
1	29-8-87	GENERAL

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J. J. Roy
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PARC INDUSTRIEL DE
SHIPPAGAN
INDUSTRIAL PARK

Project / Projet
ETUDES D'UTILISATION FONCTIONNELLE DES TERRAINS

FONCTIONAL LAND USE STUDY

ROY CONSULTANT Ltée / Ltd.

Drawing Title / Titre du Plan
ALTERNATIVE 4

Designed by: / Design par:	Drawn by: / Dessiné par: J.C.A
Checked by: / Vérifié par:	Date: 20-05-87
Scale: / Echelle:	Sheet: / Feuille: 7 of/de 8
Drawing Number: / Numéro du Plan: 11-86-P-7	Rev. 2

Drawing Number 11-86-P-8/Numéro de Plan

PROPOSED INDUSTRIAL SITE
EMPLACEMENT INDUSTRIEL PROPOSE

PHASE I

PROPOSED ROAD CONSTRUCTION
CONSTRUCTION DE ROUTE PROPOSEE

PROPOSED DITCHING
POSSE PROPOSE

PROPOSED FIRE HYDRANT AND 450 Ø CULVERT (TYPICAL)
BORNE FONTAINE ET PONCEAU DE 450 Ø PROPOSES (TYPIQUE)

PROPOSED 450 Ø CULVERT
PONCEAU DE 450 Ø PROPOSE

LIMITES DES SERVICES EXTERNES
LIMIT OF EXTERNAL SERVICES

PROPOSED LIFT STATION
STATION DE RELEVEMENT PROPOSEE

PROPOSED FORCEMAIN
CONDUITE DE REFOULEMENT PROPOSEE

PROPOSED FORCEMAIN CONNECTION TO EXISTING MANHOLE
RACCORDEMENT PROPOSE DE LA CONDUITE DE REFOULEMENT AU REGARD D'INSPECTION EXISTANT

PROPOSED STORM MANHOLE AND INTAKE
REGARD D'INSPECTION FLUVIAL AVEC TUYAU D'ADDUCTION PROPOSE

RUE DU RESERVOIR STREET

ROUTE 11B

1st RUE

UPPER SHIPPAGAN ROAD
CHEMIN HAUT SHIPPAGAN

SCALE / ECHELLE
0 100 200 300 400 500 feet/pieds
0 50 100 150 metres/mètres

NOTES

EXISTING WATERMAIN
CONDUITE D'EAU EXIST.

EXISTING SAN. SEWER
EGOUT SANITAIRE EXIST.

EXIST. STORM SEWER
EGOUT PLUVIAL EXIST.

EXIST. FORCE MAIN
CONDUITE DE REFOULEMENT EXIST.

REGARD D'INSPECTION EXIST.
EXIST. MANHOLE

PROPERTY LINE
LIGNE DE PROPRIETE

EXIST. VALVE
VANNE EXISTANTE

EXIST FIRE HYDRANT
BORNE INCENDIE EXIST.

PROPOSED WATERMAIN
CONDUITE PRINCIPALE PROPOSEE

PROPOSED SAN. SEWER
EGOUT SANITAIRE PROPOSE

PROPOSED STORM SEWER
EGOUT PLUVIAL PROPOSE

PROPOSED FORCEMAIN
CONDUITE DE REFOULEMENT PROP.

PROPOSED SAN. MANHOLE
REGARD D'INSPECTION SAN. PROP.

PROPOSED VALVE
VANNE PROPOSEE

NO.	DATE	REVISIONS
2	10-6-87	GENERAL
1	29-5-87	GENERAL

REGISTERED PROFESSIONAL ENGINEER
Province of New Brunswick
#1769
J. J. Roy
SIGNATURE
24-6-87
DATE
Province du Nouveau-Brunswick
INGÉNIEUR ENREGISTRÉ

PARC INDUSTRIEL DE
SHIPPAGAN
INDUSTRIAL PARK

Project / Projet
ETUDES D'UTILISATION FONCTIONNELLE DES TERRAINS

FONCTIONAL LAND USE STUDY

ROY CONSULTANT Ltée / Ltd.

Drawing Title / Titre du Plan
ALTERNATIVE 5

Design by: Design par:	Drawn by: Dessiné par: J.C.A
Checked by: Vérifié par:	Date: 09 - 04 - 87
Scale: Echelle:	Sheet: 8 of/de 8 Feuille:
Drawing Number: Numéro du Plan: 11-86-P-8	Rev. 2